
Preliminary Science Flight Report

Operation IceBridge Antarctica 2011



Flight: F24

Mission: George VI Ice Shelf

Flight Report Summary

Aircraft	DC-8 (N817NA)
Flight Number	120128
Flight Request	128008
Date	Saturday, November 19, 2011 (Z), Day of Year 323
Purpose of Flight	Operation IceBridge Mission George VI Ice Shelf
Take off time	12:57:46 Zulu from Punta Arenas (SCCI)
Landing time	23:56:19 Zulu at Punta Arenas (SCCI)
Flight Hours	11.1 hours
Aircraft Status	Airworthy.
Sensor Status	All installed sensors operational.
Significant Issues	None
Accomplishments	<ul style="list-style-type: none">• Low-altitude survey (1,500 ft AGL) over the George VI Ice Shelf. Completed entire mission as planned.• ATM, MCoRDS, snow and Ku-band radars, gravimeter, and DMS were operated on the survey lines.• Collected roll data from 30,000 ft during inbound transit for MCoRDS calibration.• Conducted one ramp pass (1,500 ft AGL) at Punta Arenas airport before landing.
Geographic Keywords	Antarctic Peninsula, George VI Ice Shelf.
ICESat Tracks	None.
Repeat Mission	None.

Science Data Report Summary

Instrument	Instrument Operational			Data Volume	Instrument Issues
	Survey Area	Entire Flight	High-alt. Transit		
ATM	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	62 GB	GPS receiver issues
MCoRDS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	2 TB	None
Snow Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	340 GB	None
Ku-band Radar	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	340 GB	None
DMS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	92 GB	Camera failure
Gravimeter	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.4 GB	None
DC-8 Onboard Data	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	40 MB	REVEAL crashed.

Mission Report (Michael Studinger, Mission Scientist)

This flight is a new design, and it is intended to coarsely map the sub-ice shelf bathymetry of the George VI Ice Shelf on a coarsely-spaced set of lines. The lines over the ice shelf on this mission are supplemented by others planned as part of the Elbow and Alexander 1 flights as well.

The weather in the survey area was perfect.

In total we collected 6.5 hours of science data.

The known wildlife locations were far enough away from our route to cause any problems for us.

Individual instrument reports from experimenters on board the aircraft:

ATM: Two GPS receivers had an issue that may impact data for 6 minutes in a turn. It is likely that the GPS glitch can be fixed during post processing but unclear at this point. 6.5 hours of science data collection.

MCoRDS: The MCoRDS system worked well.

Snow and Ku-band radar: The snow and Ku-band radars collected data along the entire line.

Gravimeter: Worked well.

DMS: After two thirds of the survey, the back-up camera, which was used as the primary, failed. About 3 minutes of data was lost to switch to the other camera.

DC-8 on board data: REVEAL crashed during the flight, but could be recovered. No data was lost since only the onboard display was impacted.

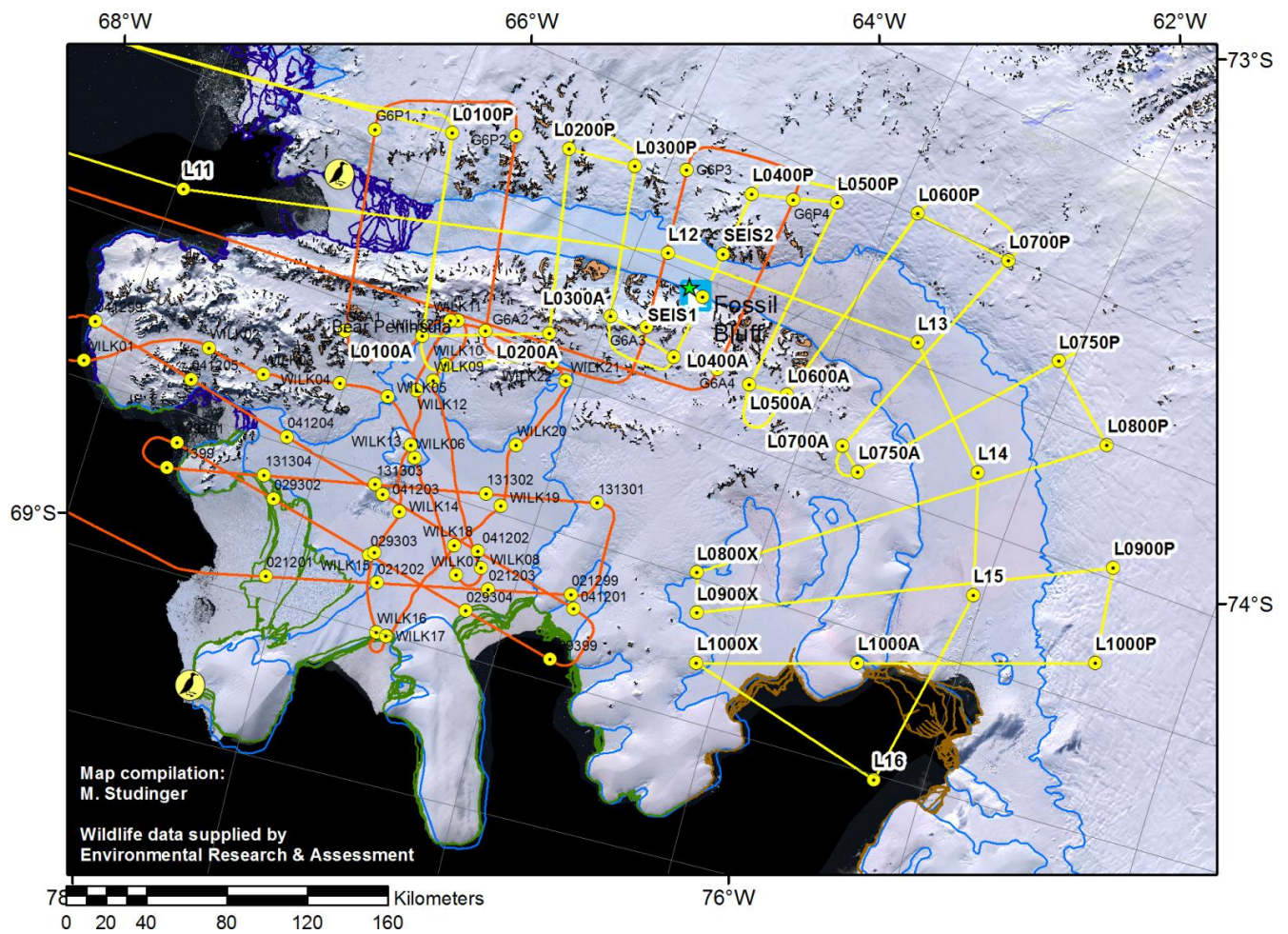


Figure 1: DC-8 trajectory and mission plan of today's flight over the George VI Ice Shelf in yellow. Red indicates trajectory from Alexander Island mission that also covered some gravity transects. Background image is LIMA mosaic.